

## **3-4-50: Chronic Disease Deaths in San Diego County, 2000-2010**

### **What is 3-4-50?**

Chronic diseases are now the major cause of death and disability worldwide, having surpassed infectious diseases and injuries. This reflects a significant change in diet habits, physical activity levels, and tobacco use.<sup>1</sup> The 3-4-50 concept<sup>2</sup> is defined as three behaviors (poor diet, physical inactivity, and tobacco use) which contribute to four chronic diseases (cancer, heart disease and stroke, type 2 diabetes, and pulmonary diseases such as asthma) that cause over 50 percent of all deaths worldwide. These chronic diseases are important to consider together because they are common causes of disability and death in San Diego County. They are also highly influenced by three unhealthy behaviors; behaviors that cause many cases of the specified chronic conditions that are preventable. In San Diego County in 2007, the 3-4-50 diseases, considered together, cost \$4 billion in direct treatment expenditures.<sup>3</sup>

### **3-4-50 in San Diego County**

From 2000 to 2010, there has been a decrease in the percentage of county deaths due to chronic disease, as well as a decrease in the rate of chronic disease related deaths. In 2000, 63% of all deaths were due to chronic disease. However, by 2010, the percentage had decreased to 56%. In addition, the rate of chronic disease deaths decreased from 440.6 per 100,000 in 2000 to 347.0 per 100,000 in 2010. Among the Regions, the South Region had the highest percentage of deaths due to chronic disease in every year from 2000 to 2010. The rate of death due to chronic disease was highest in the East Region for each year from 2000 to 2010. Within the Regions there were considerable differences in the percentage of deaths due to chronic disease among the Subregional Areas (SRAs), as well as in chronic disease death rates. More detailed information is provided in the following tables and graphs.

### **Understanding Public Health Data**

Within this document, percentages and rates are presented to describe the burden of chronic disease in San Diego County.

- A percentage is a way to express how small or large a quantity is relative to another quantity.

- A rate is the number of cases divided by the population, usually multiplied by a constant. For example 987 cases, divided by population of 654,321 would be a rate of 150.8 per 100,000 population. This means for every 100,000 people, 150-151 cases would be expected.

Both measures are provided to give a more balanced look at the burden of chronic disease within the county. Percentages, in this case, allow for the comparison of the number of chronic disease deaths relative to the number of deaths overall. *Percentages are influenced by both the number of chronic disease deaths and the number of all cause deaths. It is important to keep this in mind when interpreting the data. For example, two Regions could have the same number of chronic disease deaths, but could have completely different percentages of chronic disease deaths based on the number all cause deaths in each area.*

	Region A	Region B
Number of Chronic Disease Deaths	50	50
Number of All Cause Deaths	100	80
Percentage of Deaths Due to Chronic Disease	$(50/100) * 100\% = 50\%$	$(50/80) * 100\% = 62.5\%$

To further understand the burden of chronic disease in the county, rates were calculated to allow for comparison of between Regions, accounting for the size of the each area's population.

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<sup>1</sup> World Health Organization (WHO). "The Global Strategy on Diet, Physical Activity and Health." [http://www.who.int/dietphysicalactivity/media/en/gsf\\_general.pdf](http://www.who.int/dietphysicalactivity/media/en/gsf_general.pdf) (Accessed February 7, 2013).

<sup>2</sup> 3Four50, [www.3four50.com](http://www.3four50.com) (Accessed February 7, 2013).

<sup>3</sup> County of San Diego, Health and Human Services Agency, Public Health Services, Community Health Statistics Unit, "Economic Burden of Chronic Disease" (September 2010).

### 3-4-50 Deaths in San Diego County, 2000-2010

The following tables and charts display trends in chronic disease death rates for the county of San Diego as well as its six Regions.

3-4-50 Death Percentages Among San Diego County Residents, 2000-2010											
By Region											
Area	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
San Diego County <sup>a</sup>	63%	63%	61%	60%	59%	58%	57%	57%	56%	56%	56%
Region											
Central	61%	60%	59%	58%	58%	55%	56%	56%	55%	56%	57%
East	64%	65%	62%	61%	59%	59%	58%	59%	57%	54%	56%
N. Central	63%	61%	62%	60%	60%	59%	58%	56%	56%	55%	54%
N. Coastal	63%	63%	62%	62%	59%	59%	57%	59%	58%	58%	55%
N. Inland	63%	63%	58%	60%	59%	57%	55%	56%	55%	56%	54%
South	67%	66%	63%	64%	63%	62%	60%	59%	59%	59%	60%
Unknown	29%	36%	29%	39%	40%	36%	39%	36%	36%	45%	35%

\* Rates per 100,000 population.

<sup>a</sup>Deaths with unknown Region or SRA are reflected in the County total, but not in the individual categories. Category sums may not add up to County total.

<sup>†</sup> 3-4-50 Deaths include Stroke, Coronary Heart Disease (CHD), Diabetes, COPD, Asthma, and Cancer.

<sup>§</sup> Rates and Percentages not calculated for fewer than 5 events. Rates not calculated in cases where zip code is unknown.

Source: Death Statistical Master Files (CA DPH), County of San Diego, Health & Human Services Agency, Epidemiology & Immunization Services Branch;

SANDAG, Current Population Estimates, 2010.

Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHS), Community Health Statistics, 01/23/2013.

3-4-50 Death Rates* Among San Diego County Residents, 2000-2010											
By Region											
Area	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
San Diego County <sup>a</sup>	440.6	435.2	402.8	402.7	386.7	373.8	357.8	353.1	347.5	336.6	347.0
Region											
Central	391.3	377.3	363.5	347.7	339.8	318.2	304.3	297.0	286.3	294.8	310.7
East	517.7	539.1	491.5	504.0	458.6	456.5	451.4	455.7	452.1	417.1	423.7
N. Central	417.1	388.3	360.1	351.7	348.9	337.6	331.9	305.1	316.6	302.2	299.4
N. Coastal	415.1	414.5	400.6	383.1	370.7	371.0	337.3	350.2	336.7	318.6	343.0
N. Inland	482.0	471.3	427.6	438.9	418.4	393.7	377.0	363.9	362.7	360.4	370.0
South	415.5	419.7	372.4	374.1	365.6	362.2	332.2	340.7	328.6	327.3	337.9
Unknown	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

\* Rates per 100,000 population.

<sup>a</sup>Deaths with unknown Region or SRA are reflected in the County total, but not in the individual categories. Category sums may not add up to County total.

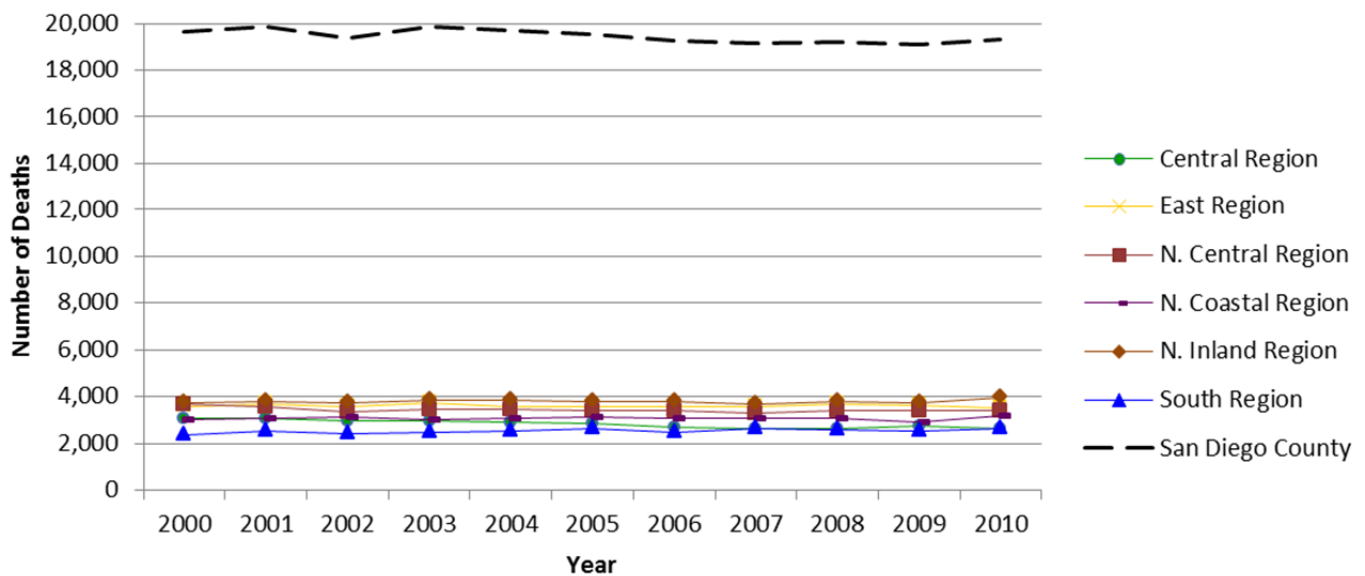
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Source: Death Statistical Master Files (CA DPH), County of San Diego, Health & Human Services Agency, Epidemiology & Immunization Services Branch; SANDAG, Current Population Estimates, 2010.

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## All Cause Deaths Among San Diego County Residents, 2000-2010



\*Includes all causes of death.

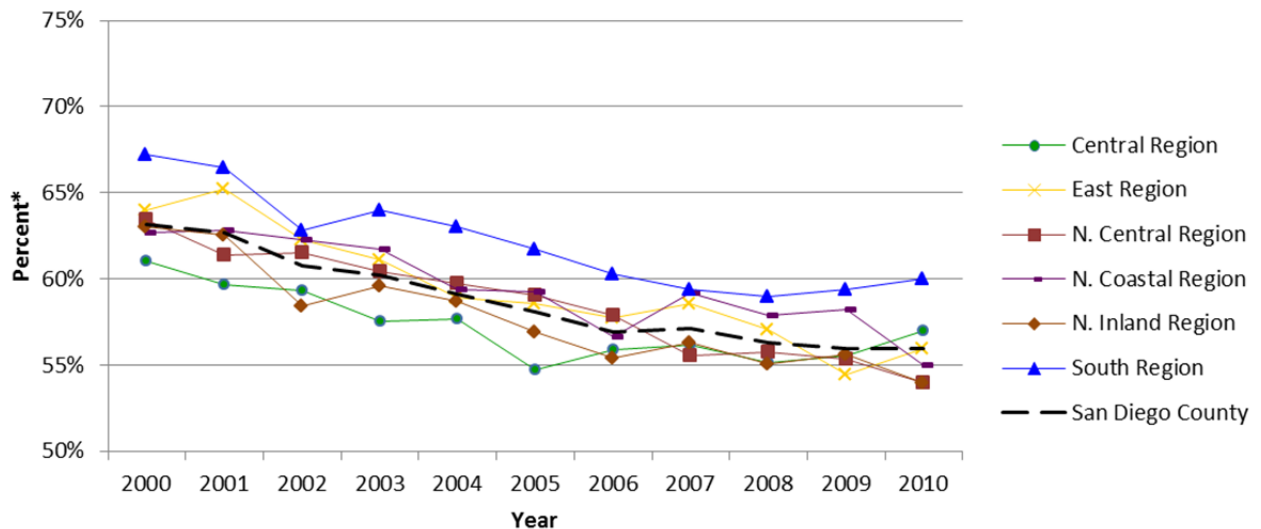
Source: Death Statistical Master Files (CA DPH), County of San Diego, Health & Human Services Agency, Epidemiology & Immunization Branch: SANDAG, Current Population Estimates, 2010.

Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Community Health Statistics, 01/25/2013.

From 2000 to 2010:

- The numbers of deaths due to all causes in San Diego County and in each of the six Regions have remained relatively stable.
- The South and Central Regions had the lowest number of deaths due to all causes, while the North Inland and East Regions had the highest number of deaths due to all causes.

### 3-4-50 Death<sup>†</sup> Percentages\* Among San Diego County Residents, 2000-2010



\*3-4-50 deaths as a percentage of all cause deaths.

†3-4-50 deaths include stroke, coronary heart disease (CHD), diabetes, COPD, asthma, and cancer.

§Rates not calculated for fewer than 5 events. Rates not calculated in cases where zip code is unknown.

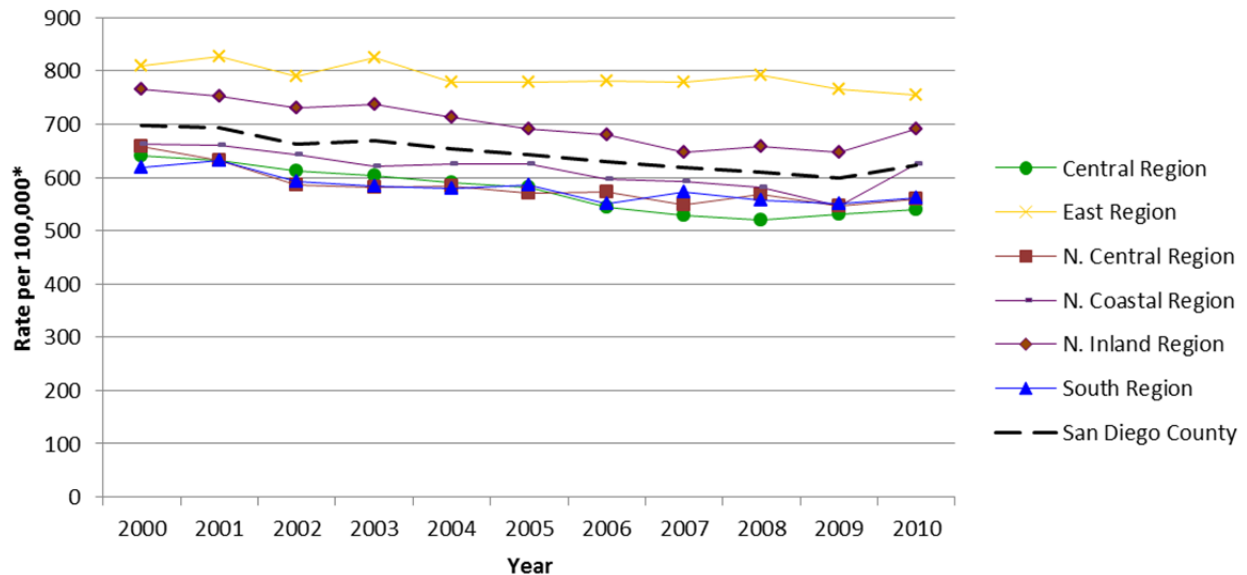
Source: Death Statistical Master Files (CA DPH), County of San Diego, Health & Human Services Agency, Epidemiology & Immunization Branch: SANDAG, Current Population Estimates, 2010.

Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Community Health Statistics, 01/25/2013.

From 2000 to 2010:

- The South Region had the highest percentage of deaths due to chronic disease.
- Overall, there was a decrease in the percentage of deaths due to chronic disease for the County and the Regions.

## All Cause Death Rates\* Among San Diego County Residents, 2000-2010



\*Rates per 100,000 population.

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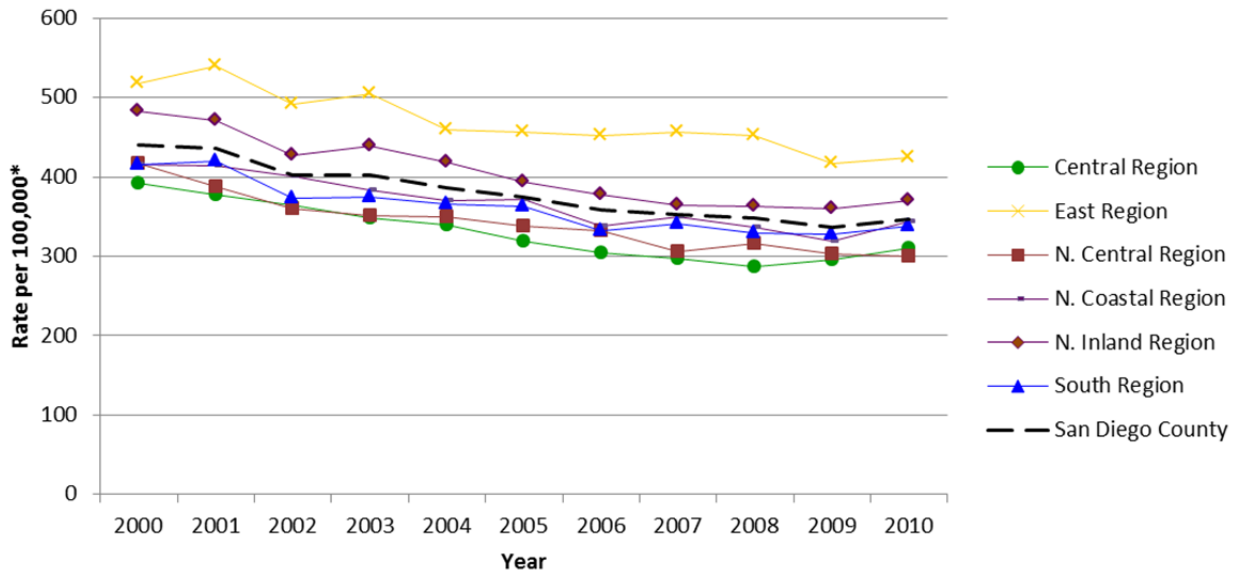
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Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Community Health Statistics, 01/25/2013.

From 2000 to 2010:

- The East Region had the highest all cause death rates, while the Central Region tended to have the lowest all cause death rates.
- Overall, there was a decrease in the all cause death rate for the county as well as the Regions.

### 3-4-50 Death<sup>†</sup> Rates\* Among San Diego County Residents, 2000-2010



\*Rates per 100,000 population.

<sup>†</sup>3-4-50 deaths include stroke, coronary heart disease (CHD), diabetes, COPD, asthma, and cancer.

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Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Community Health Statistics, 01/25/2013.

From 2000 to 2010:

- The East Region had the highest chronic disease death rates, while the Central Region tended to have the lowest.
- Overall, for the county and the Regions, there was a decrease in the rate of death due to chronic disease.